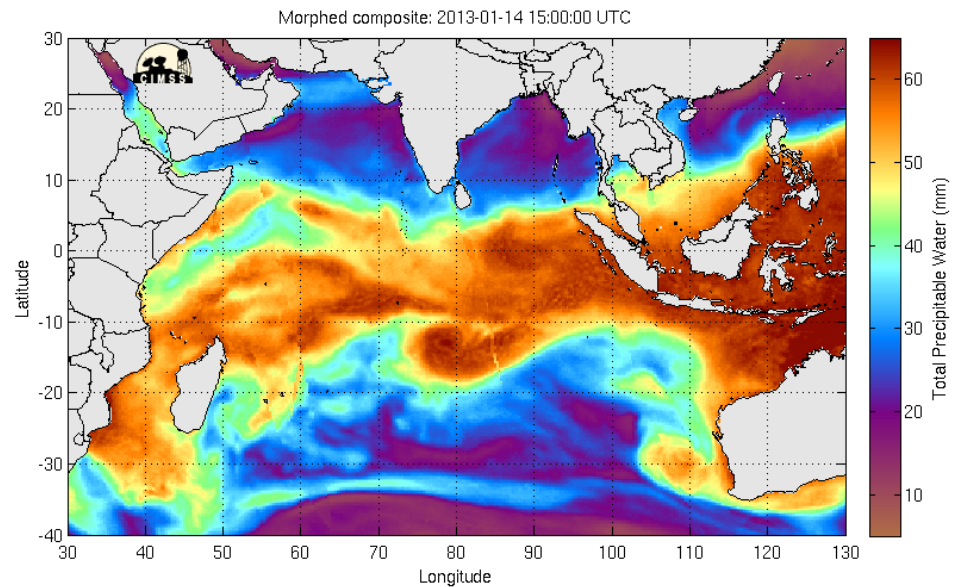


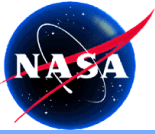
# Investigation of the Wet Tropospheric Correction for SWOT

PI: Shannon Brown, JPL

## Project Overview

**Assess the impact of the wet tropospheric correction over all spatial scales for the SWOT mission and evaluate correction approaches for over ocean and land**

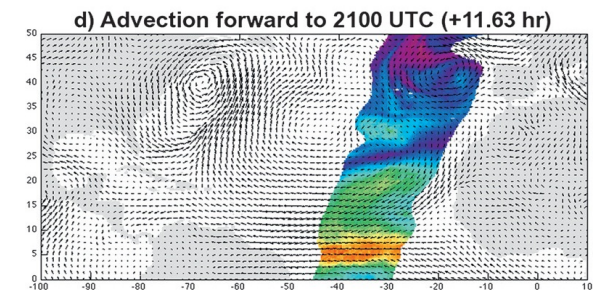
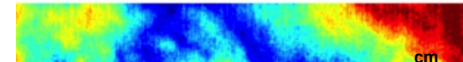




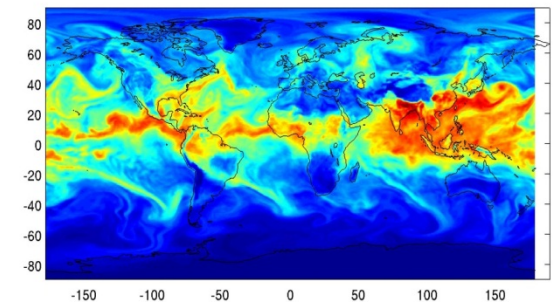
# Project Objectives



- Use measurements from satellite and airborne sensors and model data to assess the variability of the wet tropospheric path delay on spatial scales of 10-300 km over the ocean
  - Evaluate small scale variability using airborne measurements from HAMSR data set
  - Use satellite and model data to evaluate regional spectral variability
- Evaluate approaches to correct for cross-swath wet tropospheric path delay variability using the nadir radiometer measurement along with ancillary water vapor data from models and satellites
  - Objective analysis
  - Adaptive morphing
- Evaluate the impact of the wet tropospheric variability on the SWOT measurements over inland water bodies, and evaluate approaches for the wet tropospheric correction over land
  - Use ground based WV data to evaluate model products, climatology, over-land radiometer retrievals



[from Wimmers and Velden, 2010]





## Addressing Phase-A Issues

- **Quantifying the residual errors across the swath after application of the nadir radiometer measurement**
  - Assess errors both globally and regionally
  - Assess improvement from alternative radiometer designs (e.g. multi-beam) and swath correction approaches
- **What are the residual wet tropospheric correction errors over land relative to the error budget arising from the use of ancillary data since there is no payload that can provide this measurement**